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JP6157003A2: PRODUCTION OF HYDROGEN UTILIZING IRON

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Country: JP Japan

Key:

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Application Number: JP199200003103

IPC Class: C01B 3/10;

ECLA Code: C01B3/10;

Abstract

Purpose To effectively generate hydrogen and utilize used scraps as a raw material for steel manufacturing by separately introducing oxygen gas from specific positions between respective introduction positions of a gas containing steam and oxygen and an iron-based raw material capable of catalytically reacting in a countercurrent state.

Constitution An iron-based raw material (e.g. scrap) 12 housed in a hopper 10 is continuously fed from the top into a reactional column 14. On the other hand, oxygen gas 13 is fed from the middle part of the reactional column 14 and heat is generated while oxidizing the charged iron-based raw material to keep the whole at a prescribed temperature. A gas 15 containing steam and oxygen gas is fed from the bottom of the reactional column 14 and made to react with the iron-based raw material to generate hydrogen gas. The oxygen gas 13 is charged at a position (10) within the range of $\pm 0.5L$ when the distance between the charging position of the iron-based raw material and the charging position of the gas containing the steam and oxygen is L . The ratio of the quantity of the oxygen charged together with the steam to the charged quantity of the oxygen is (1-5):1. The generated hydrogen gas (H_2/H_2O -based mixed gas) 16 is led to a separating column 20 to separate and recover the hydrogen gas by cooling the steam.

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Foreign References: (No patents reference this one)



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